Trigger Finger: Recognition and Current Treatment Options

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Case Example

- 55-year-old right-handed female presents to the clinic with right ring finger pain and stiffness
- No history of trauma or previous surgery
- No tingling or numbness
- History of type 2 diabetes, well controlled
- Worked as a clerk for a government office for many years
- Painful, limited finger motion interferes with keyboarding and picking up items
- Physical examination significant for tenderness to palpation over the palmar aspect of the MCPJ of the ring finger with no other joint tenderness or swelling
- When making a fist, her ring finger MCPJ, PIPJ, and DIPJ locked in a flexed position that required manipulation to extend the finger
- A firm mass was palpated in the palm with finger flexion which moved into the finger with extension.

Introduction

Stenosing tenosynovitis, also known as trigger finger (TF), is an inflammatory condition that causes pain in the distal palm and proximal digit with associated limited motion. The disorder is particularly noticeable when it begins to inhibit day-to-day functioning. TF affects 2-3% of the general population and up to 20% of the diabetic population.[1,2] Age and duration of diabetes are commonly cited as contributing factors, although the effect of well-controlled blood glucose and HbA1c on the frequency and cure rate of TF has not been established.[2,3] TF is most commonly seen in individuals aged 40-60 years old with a six times greater frequency in females than males.[4] The most common digits are the middle and ring finger of the dominant hand.[5] In the United States, it is estimated there are 200,000 cases of TF each year with initial presentation typically being to a primary care physician.[6] For this reason, it is essential for primary care physicians to recognize this common pathology and treat symptoms early on to prevent progression and the need for surgical intervention.

The severity of triggering is commonly graded with the Green's classification system (see Table 1).[9]

Table I: Green's Classification System

Grade	Symptoms
Grade I (pre-triggering)	Tenderness and pain at A1 pulley
Grade II (active)	Catching with active full extension
Grade IIIA (passive)	Catching requiring passive extension
Grade IIIB (passive)	Inability to actively flex
Grade IV (contracture)	Catching with fixed flexion contracture of PIPJ

Pathology Correlates with Clinical Findings

TF occurs when the tendon sheath, most commonly at the first annular pulley (A1), or the flexor tendons thicken due to fibrocartilaginous metaplasia. This results in impaired gliding motion of the flexor tendons.[10] The stenosed A1 pulley can lead to pinching of the flexor tendons and cause the formation of a nodule on the FDS tendon at its bifurcation.[11] The nodule of the FDS bifurcation moves proximal to the A1 pulley when the finger is flexed. Upon extension, the tendon nodule gets caught on the A1 pulley. This prevents smooth extension and is the source of pain and triggering (see Figure 1). In a similar manner, thumb triggering is the result of a stenosed A1 pulley creating a nodule on the FPL tendon which prevents smooth gliding of the FPL.

Figure 1: Illustrating the pathology of trigger finger

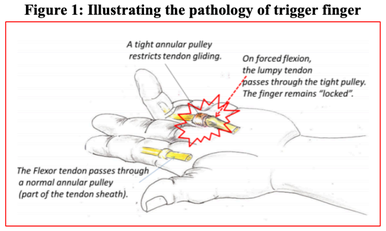

Figure 1: A stenotic tendon tunnel can lead to nodular formation of the flexor digitorum superficialis (FDS) tendon. This results in difficulty with extension, significant pain, and a popping sensation when the nodule is forced under the pulley. Image by Jose Borrero, MD.

Treatment Options

Current treatment options include both non-surgical and surgical interventions. Non-surgical interventions include activity modification, splinting, and corticosteroid injections. Nonsteroidal anti-inflammatory drugs (NSAIDs), though commonly used, have no evidence supporting efficacy.[8] Examples of splinting (see Figure 2) and corticosteroid injection (see Figure 3) are below.

Figure 2: Common examples of PIPJ splints

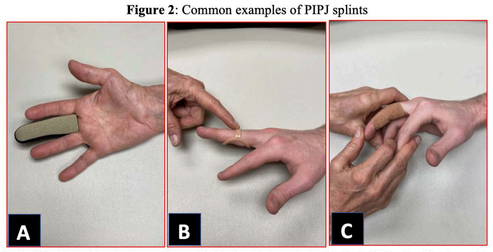

Figure 2: A) A stiff cushioned sleeve acting as a PIPJ splint, B) A prefabricated plastic PIPJ splint, C) A large adhesive bandage acting as a PIPJ splint.

- A retrospective analysis found that 87% of patients who wore their PIPJ orthotic device both day and night for a minimum of six weeks were found to require no further treatment at one year follow up.[13]

Figure 3: An example of a corticosteroid injection at the A1 pulley

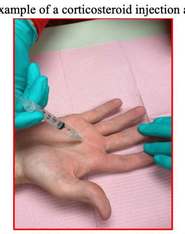

Figure 3: A corticosteroid injection (1 cc of 1:1 dexamethasone and 1% lidocaine) at the level of the A1 pulley is a common treatment modality. Efficacy has been shown regardless of anatomic injection site (intra-sheath or extra-sheath).

- Injections of corticosteroid and 1% lidocaine in a 1:1 mixture for a total volume of 1 mL can be inserted into the tendon sheath, A1 pulley, or adjacent tissue.[17]
- Steroid injections offer symptom relief lasting a few months in as many as 57-87% of patients.[18]

Surgical interventions for TF can be safely performed under either conscious sedation or local anesthesia, with or without a tourniquet.[27] Two primary modes of surgical intervention exist for the amelioration of TF: open and percutaneous release. The end-goal of A1 pulley release for either method is illustrated (see Figure 4).

- The success rate of open surgery has been reported at 99-100% at varying follow up intervals up to one year.[26,31,32]
- Complication rate of percutaneous release was calculated at 2.2% for n = 2,114.[28]
- Complication rate of open release was calculated at 1.0% for n = 999.[33]

Figure 4: Illustrating the A1 pulley release

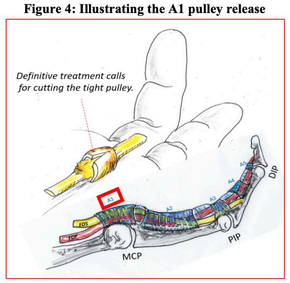

Figure 4: For definitive surgical management, the A1 pulley must be divided to relieve the obstruction and allow smooth flexion and extension. Image by Jose Borrero, MD.

Case Example Continued

- Given the patient's presentation with triggering of the digit, tenderness over the A1 pulley, and lack of trauma history, we diagnosed trigger finger in this patient
- After discussing the risks and benefits of the treatment options, the patient elected for a corticosteroid injection
- She was also given a neoprene finger sleeve to wear every night, and in the daytime when possible
- At 12 weeks follow up, she noted early improvement in her triggering which had since recurred
- Due to her history of diabetes, the patient was then referred for surgery
- After an open release under local anesthesia in the procedure room, the abnormality was corrected
- At one-year post-operative follow-up visit, there was no evidence of recurrence
- She had regained full active and passive range of motion of her finger.

Practice Recommendations

› Splinting is recommended as a first line conservative treatment for trigger finger if there is not a fixed contracture. Strength: B

› Corticosteroids can completely resolve trigger finger in the majority of non-diabetic patients. Strength: A

› Surgical release of trigger finger has a success rate of up to 99% for patients who do not respond to conservative management. Strength: A

References

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All 36 references are available on a separate document upon request.